



SHOUT
SHARE **IT**





A
S Y N O P S I S
OF A
COURSE OF LECTURES
ON
ANATOMY and PHYSIOLOGY.

by BUSICK HARWOOD, M. D. F. R. S. & S. A.

PROFESSOR OF ANATOMY
IN THE UNIVERSITY OF CAMBRIDGE.

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RICHARD FARMER, D.D.

MADE OF

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1861

ANATOMY AND PHYSIOLOGY

JOHN HENSON M.D. F.R.S.

LONDON

IN THE UNIVERSITY OF CAMBRIDGE

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PRINTED BY J. JOHNSON, ST. PAUL'S CHURCH-YARD
1861

T O
RICHARD FARMER, D.D.

MASTER OF EMMANUEL COLLEGE

A N D

PRINCIPAL LIBRARIAN

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THE FOLLOWING

S Y N O P S I S

O F A

C O U R S E O F L E C T U R E S

O N

Anatomy and Phyfiology,

IS MOST RESPECTFULLY INSCRIBED,

B Y

HIS MOST OBEDIENT HUMBLE SERVANT,

BUSICK HARWOOD.

EMMANUEL COLLEGE,

1st Feb. 1792.

WILLIAM WALKER, D.D.

OF THE UNIVERSITY OF CHICAGO

AND

OF THE UNIVERSITY OF TORONTO

OF THE UNIVERSITY OF MICHIGAN

OF THE UNIVERSITY OF CALIFORNIA

HARVARD UNIVERSITY

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1792

ADVERTISEMENT.

HAVING found that the COMPENDIUM ANATOMICUM made use of by my predecessor, was insufficient to answer all the purposes of the more enlarged plan, which I have ventured to adopt in the delivery of anatomical lectures; I have been led to attempt the composition of a Syllabus, which I hope will convey a more perfect idea of the subjects I intend to enlarge upon in the ensuing course.

With regard to the order, in which I have chosen to arrange the different articles of this Syllabus, I have adhered as nearly to that in which they will be treated of at the lectures,

as

as the nature of the undertaking would admit. And to remedy the inconvenience, which might arise from any occasional breach in this order, I have avoided the division of it into separate lectures, and have prefixed numbers to each article, by which means they may be referred to at pleasure. The number of articles has also been reduced into as small a compass as possible, by omitting the enumeration of the Bones and Muscles, a catalogue of which will be found at the end of the Syllabus.

Besides the more immediate purpose for which the following pages were designed, I am not without hopes that an attempt (which as far as I know is the first,) to collect and arrange the principal facts, and discoveries in Anatomy, may be of use to other Teachers of the art, who may possibly think it worth while to extend and improve the plan which I now offer to the Public.

After the Anatomy of the human body is completed, it is likewise my intention to give
some

some separate lectures on the structure of Animals. And in the division of the subject, all those Analogies which assist us in explaining the structure and uses of the Animal Œconomy, will be particularly pointed out.

The articles which compose this part of the Syllabus, are comprised under the general head of *Comparative Anatomy*.

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1. **R**ISE, progress, and present state of the science.

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2. Of the various kinds of preparations made use of, in investigating the more obscure parts of the human frame.

3. Explanation of the instruments, and the manner of using them, for the purpose of preparing, and preserving, the different parts of an animal body.

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7. The properties and use of this fluid.

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8. Composed of two parts.

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9. Supposed cause of their red colour.

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14. Difference between arterial and venous blood.

15. Priestly's doctrine, and experiments.
16. Human blood compared with that of animals.

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25. The beginning and progress of *Osification*.

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48. General account of the synovial glands, and of the fluid secreted by them, for the lubrication of the joints.
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56. * Particular description of the *Sutures*, by which these bones are connected with each other.
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 SAGITTALIS.
 LAMBDOIDALIS,
 SQUAMOSA,



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90. Of the ligaments connecting the vertebrae.
91. Of their intervening cartilages.
92. Of

1870
The first of the year
was a very successful one
and the business was
very good.

1871
The second of the year
was also a very successful one
and the business was
very good.

1872
The third of the year
was also a very successful one
and the business was
very good.

1873
The fourth of the year
was also a very successful one
and the business was
very good.

1874
The fifth of the year
was also a very successful one
and the business was
very good.



- 92. Of the incurvations of the spine.
- 93. Of its mechanism and uses.
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- 95. Of the false vertebræ and holes for the passage of nerves.
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127. Of the PETELLA, and its uses.
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129. Of the TARSUS.

The



the following are the results of
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1. The following is a list of
the names of the persons who
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9. The following is a list of
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The names and structure, of the seven bones which compose it.

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143. *Apon-*

143. *Aponeuroses.*

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1864. Of the same kind, but the quantity of
the substance.

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150. Of the treatment of wounds of the abdomen.

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159. Of

- 159. Of those which move the bones of the leg, upon the os femoris.
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190. Of the ancient doctrines concerning it.

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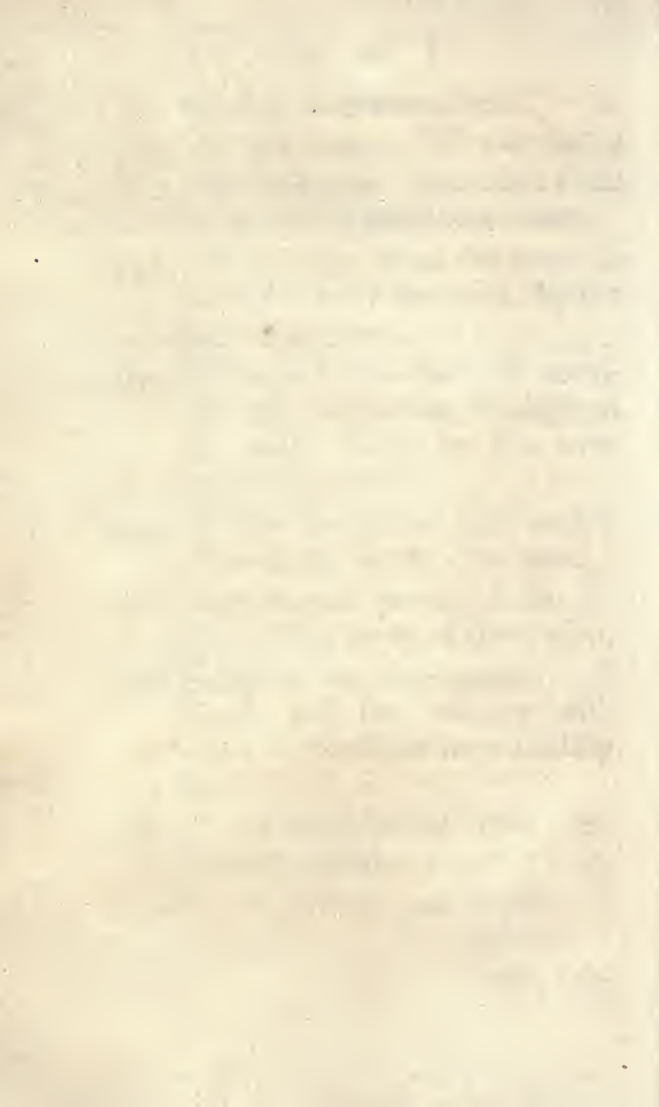
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191. Of the SYSTOLE and DIASTOLE of the ventricles and auricles of the heart.

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211. Of the primary uses of respiration:

212. Of the changes produced in the blood, in its passage through the lungs:

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214. Observations on the cause of hickuping, and other spasmodic affections of the diaphragm.

215. Of *peripneumony, asthma, phthisis pulmonalis*, and other diseases of the lungs.

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218. Of the course of the principal arteries and veins.

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219. The peculiarities of each pointed out, and the causes of them investigated.

220. Prac-





220. Practical remarks on the treatment of *Popliteal Aneurism*.

221. Of PHLEBOTOMY.

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222. Of the course of the nerves, with respect to the blood-vessels.

223. Of the manner in which bleeding in the arm is usually performed.

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224. Of *Aneurism* occasioned by puncture of the artery in blood-letting.

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225. ARTERIOTOMY, how performed, and when necessary.

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227. Of the processes of the dura mater and their uses.

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228. Of the TUNICA ARACHNOIDÆA.

229. Of the PIA MATER.

Its structure and uses.

230.^k Of the circulation of the blood in the brain.

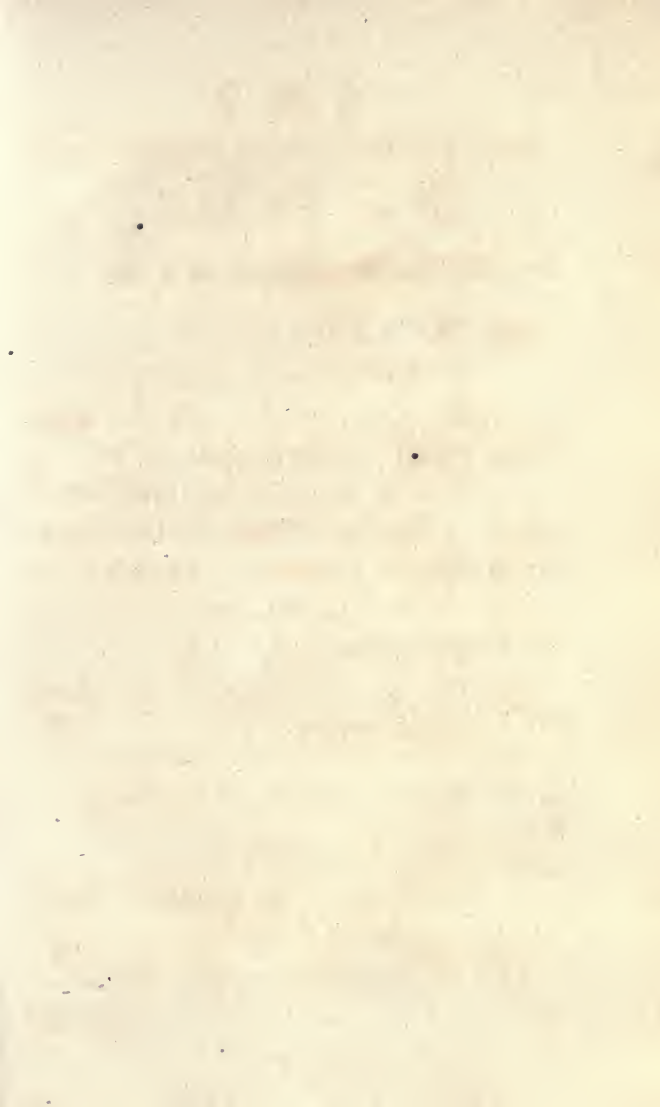
General Division of the Brain.

231. Of the CEREBRUM.

Division of this part into hemispheres and lobes.

232. Of the cortical substance.

233. Of





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233. Of the medullary substance.
234. Of the *corpus callosum*, *fornix*,
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235. Of the *corpora striata*, *thalami
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236. Of the *tubercula quadrigemina*,
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237. Of the four ventricles of the
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240. Of their peculiarities.
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243. A particular description of each, and general account of their distribution, and uses.

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254. Of *Schirrus*, *Cancer*, and other diseases of the glands.

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255. Of the situation, and office, of the *parotid*, *maxillary*, and *sublingual* glands.

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268. Of the LARYNX, and the cartilages which compose it.

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274. Practical observations on the causes; and cure of *ascites*, and other diseases of the abdomen.

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286. Of *cardialgia*, indigestion, and other diseases of this organ.

287. Of the causes and effects of vomiting.

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288. Its structure, situation, &c.

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289. Of the nature and properties of the pancreatic juice.

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290. Its structure, and situation.

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291. Conjectures concerning its use.

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294. Of the use of the omentum.

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298. Of the hepatic artery.

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301. Of the *Gall Bladder*.

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305. Of the use of the liver.

306. Of the difference between the *cystic* and *hepatic* biles.

307. Examination into the nature, and uses of each.

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309. General account of *Chylification*.

310. Of the diseases of the liver.

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313. Of the peristaltic motion of the intestines.

314. Of the operation of cathartic medicines, &c.

315. General description of the *Mesentery*.

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316. Its connexion with the stomach, &c.

317. Entrance of the *ductus communis*, and *ductus pancreaticus* into it.

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318. Their situation, extent, &c.

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319. Of the entrance of this intestine into the *Colon*.

Of the valve of the colon.

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Observations on the fatal consequences of disease in this part.

Of the CÆCUM.

320. Its figure, situation, and supposed uses.

*Of the variety of its shape and size in different animals.

321. Of the *Appendicula vermiformis cæci*.

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* See comp. anat.

Conjectures concerning its use.

Of the COLON.

322. Description of the course and circumvolutions of this intestine.

Of its ligamentary bands and other peculiarities.

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323. Its structure and situation.

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324. Of the *sphincter* and *levator* ani.

325. Of the glandular *lacunæ* of the large intestines.

326. Remarks on the difference of the structure and uses of the large and small intestines.

327. Of diseases and wounds of the intestines.

328. General observations on the use of clysters.

Particular

My dear Sir,

I have the honor to acknowledge the receipt of your letter of the 10th inst.

and in reply to inform you that the same has been forwarded to the proper authorities for their consideration.

I am, Sir, very respectfully, your obedient servant,

J. H. [Signature]

Enclosed find a copy of the report of the committee on the subject of the proposed amendment to the constitution.

I am, Sir, very respectfully, your obedient servant,

J. H. [Signature]

I am, Sir, very respectfully, your obedient servant,

J. H. [Signature]

I am, Sir, very respectfully, your obedient servant,

J. H. [Signature]

I am, Sir, very respectfully, your obedient servant,

J. H. [Signature]

Particular description of the Mesentery.

329. Its mode of connexion with the intestines.

Of the blood vessels, nerves, &c. of the mesentery and intestines.

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Of the LACTEAL VESSELS.

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Of the general structure of the *lacteals* and *lymphatics*.

Description and use of their numerous valves.

331. Of the *ampullulæ* of the *lacteals*.

Demonstration of the *lacteals* on the intestines of an animal recently killed.

332. Of their passage to the *thoracic duct*.

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334. Of the *Thoracic Duct*.

Of the structure and situation of this duct.

Of its termination in the angle between the *jugular* and *sub-clavian* veins on the left side.

Use of this duct.

335. Remarks upon its passage, and the manner in which the *chyle* and *lymph* are propelled through it.

336. Observations on the manner in which animals are nourished.

Of the *Lymphatics*.

337. General history of the absorbent system.

Discovery of this system in birds, fishes, and amphibia.

Remarks on the importance of this discovery.

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338. Of the origin of the lymphatics.

Their universality, &c.

Of their termination in the thoracic duct.

339. *Modus operandi* of these vessels.

Antient opinions concerning absorption by the *meseraic* veins.

Refutation of this doctrine by the experiments of HUNTER and others.

The absorbent powers of these vessels, how promoted, &c.

Of *Lymphatic Glands*.

340. Their number, names, size, and situation in different parts of the body.

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Of the fluid secreted by them.

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341. Of diseases of the lymphatic glands arising from the absorption of venereal matter, &c.
342. Of *Scrophula*.
343. Of the absorption of morbid matter from abscesses, ulcers, &c.
344. Practical remarks on the treatment of *hydropic complaints* in general.
345. Of the methods of discovering and injecting the lymphatic vessels.

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346. Of the situation, and general structure of the kidneys.
- Of their nerves and blood vessels.
347. Of the cortical, and medullary substances of the kidneys.
- Of the *papillæ* and their orifices.

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"Of the *infundibula* and pelvis of the kidneys.

348. Remarks on the quantity of blood sent to the kidneys.

349. Foetal peculiarities of the kidneys.

Of the use of the kidneys.

350. Of the URETERS.

Their structure, office, and course.

Of their entrance into the bladder.

351. Of the GLANDULÆ RENALES.

"Of the BLADDER.

352. Its situation, structure, and use.

353. Evacuation of the urine, how performed.

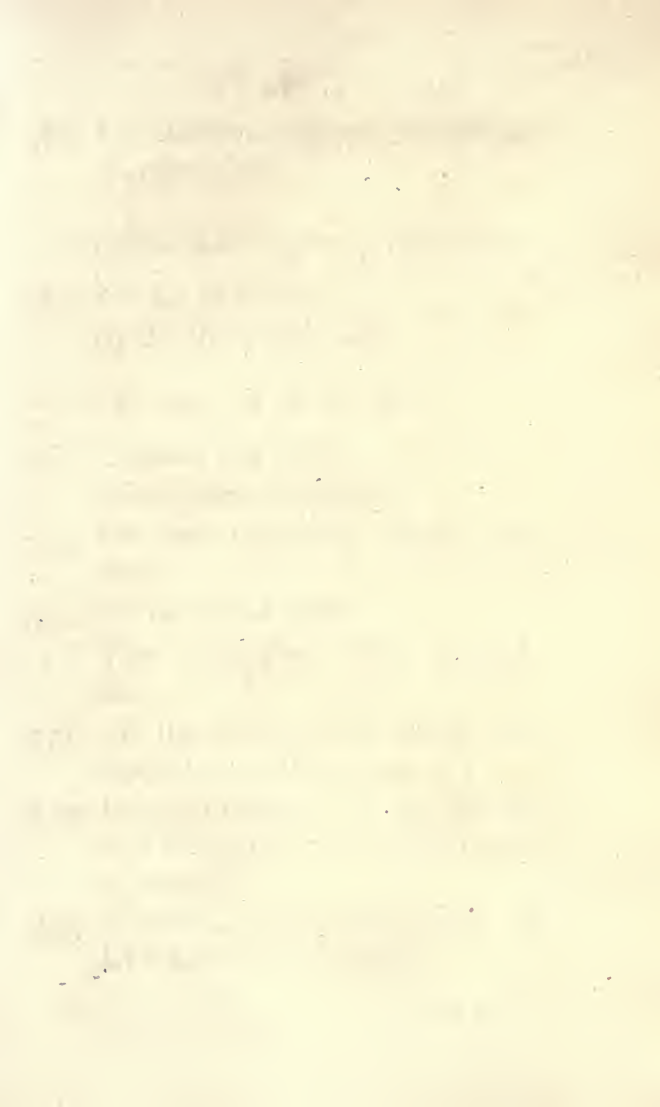
Of the muscles employed in this office.

354. Analysis of urine.

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- 355. Remarks on the different appearances of this fluid, in various diseases.
- 356. Of *Calculi* in the kidneys, and the symptoms attending their passage to the bladder.
- 357. Of *Nephrotomy*.
- 358. Of ulcers and other diseases of the kidneys.
- 359. Of *Calculi* in the urinary bladder.
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- 361. Experiments of HALEs, and others.
- 362. Nature and properties of one species investigated by SCHEELÉ.
- 363. A different species discovered.
- 364. Observations on the various kinds of solvents made use of, for the removal of the stone.
- 365. Of *Lithotomy*, and the methods of performing that operation.
- 366. Of





366. Of *Diabetes, Dysfury*, suppression of urine, &c.

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367. Of the SCROTUM.
Its structure and uses.

Of the TESTES.

368. Coats of the testis.
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369. Of the spermatic artery and vein.

370. Of the *tubuli testis*.
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371. Of the use of the testes, and separation of the semen.

372. Of the properties of the semen, and its agency in the generation of animals.

373. Theories, and experiments of LEWENHOEC and others.

374. Of *Hydrocele*. 10 888
 375. Of *Hernia humoralis*, and other diseases of the testicles. 10 888
 376. Of the *Vasa deferentia*. 10 888

377. Remarks on the structure, and passage of the spermatic cord.

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379. Of the *Vesiculæ seminales*. 10 888
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380. Of the *Corpora cavernosa Penis*.
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381. Of the *Urethra*.
 Of the corpus spongiosum urethrae.

Of the bulb of the urethra.

Of the membranous portion of the urethra.

382. Of





382. Of the situation, structure, and office of the *Prostate Gland*.

383. Of Cowper's glands.

384. Lacunæ of the urethra, &c.

385. Of the Glans Penis and Præputium.

386. Of the blood vessels, nerves, and lymphatics of these parts.

387. Of the muscles called *Erectores*, and *Acceleratores*.

388. Of the separate, and combined uses of the above-mentioned parts.

389. Of strictures, and other diseases of the urethra.

Of the introduction of the catheter.

390. Observations on the use of *Bougies*.

391. Of GONORRHŒA.

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392. Observations on the use of mercury in this disease.

393. Of the LUES VENEREA.

394. Of the attack and progress of this disease.

395. Of its local and constitutional effects.

396. Of the treatment of the lues venerea in its different stages.

Consequences of neglect or ignorance in the attempts to cure this disease.

397. Of mercurial preparations in general.

398. Of the effects of mercury on the constitution.

**Of the Female Organs of Generation.*

399. Of the external parts.

Of the *Clitoris*, *Hymen*, and *carunculæ myrtiformes*.

400. Of the *Urethra*.

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Its situation, and structure, compared with the Urethra of the male subject.

401. Of the *Vagina*.

Of the *rugæ*, and nervous *papillæ* of the vagina.

402. Of the *Uterus*.

Its substance, form, and situation.

403. Of the *os internum*, *cervix*, and *fundus uteri*.

Of the ligaments of the uterus.

404. Of its blood vessels, &c.

405. Of the *Tubæ fallopianæ*.

Their situation, and connexion with the *ovaria*.

406. Of the *Ovaria*.

Their structure, situation, &c.

407. Of the *Ovula* and *Corpora lutea*.

408. Of the particular functions, and combined uses of the above parts.

409. Of

409. Of the *Menses*.

Of the cause of the menstrual flux.

Of its natural duration and periodical return.

Consequences of the irregularity, obstruction, or excess of this evacuation.

410. Of the disorders incident to women at the first appearance, and natural cessation of this discharge.

411. Remarks on the cause of periodical hæmorrhages.

412. Of dropfy of the ovarium.

413. Of the diseases of the Uterus, &c.

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414. Of the state of the Uterus after conception.

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Of false conceptions.

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415. Of extra-uterine conceptions.

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416. Of the *Placenta*.

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417. Of the *umbilical cord*.

418. Of the vessels which compose it,
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419. Of the *Chorion* and *Amnios*.

420. Of the *Liquor Amnii*.

421. *Of the *Allantois*.

422. Remarks on the mode of com-
munication between the mother
and the foetus.

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* See comparative anatomy.

423. Of the manner in which it is supplied with nourishment.

Various opinions of authors on this subject.

424. Of the progressive changes which the foetus undergoes, during the usual term of pregnancy.

425. Of the situation of the foetus in utero at different periods of gestation.

426. Particular description of the circulation of the blood in a foetus.

Of the *ductus arteriosus*, *ductus venosus*, &c.

427. Of *Parturition*.

Symptoms of approaching labour.

428. Observations on the usual modes of delivery.

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Of the extraction of the *secundines*.

429. Of the causes of difficult labour.

430. Symptoms of the child's being dead, &c.

431. Of preternatural births, and the instruments employed for the extraction of the foetus.

432. Of the *Cæsarean operation*.

433. Of the diseases incident to women during pregnancy.

434. Of the breasts, and the changes which take place in them during gestation, and after child birth.

435. Of the disorders subsequent to parturition, &c.

436. Of *Abortion*.

Its causes and prevention.

437. Experiments generally instituted (in suspicious cases) to ascertain,

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438. Observations on the usual appearances in cases of suspected violence.

439. Cautions to persons who may be called upon to give evidence on such occasions.

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Of the E A R.

440. Of the external parts of the ear,
and its muscles.

Of the *Meatus auditorius exter-*
nus.

441. Of the *Glandulæ Ceruminosæ*.

442. Of the *Membrana Tympani*.

Its structure, situation, attach-
ments, &c.

443. Of the *Officula Auditus*, and the
small muscles attached to them.

444. Of the *Labyrinth* of the ear.

445. *Vestibulum*, *semicircular canals*,
and *cochlea*.

Of the two *Fenestræ*.

Of the mastoid cells, &c.

446. Of the *Tuba Eustachiana*.

447. Of the auditory nerves, and their
distribution.

Of the *Chorda Tympani*.

- 448. Of the separate and combined uses of all these parts.
- 449. Of the sense of hearing.
- 450. Of deafness, and its causes.
- 451. Remarks on the cure of nervous deafness, by electricity.
- 452. Of pain in the ear, and other diseases of that organ.

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- 453. Of the external parts of the nose.

Of the bones of the nose.

Of its muscles and cartilages.

- 454. Of the *Septum Narium*.

- 455. Remarks on the peculiar form, situation, and use of the *Osseæ Spongiosæ*.

456. Of



1865

Ed. Geo. Davis, Virginia

My dear Sir, I have the honor to acknowledge the receipt of your letter of the 10th inst. in relation to the matter of the purchase of the land for the purpose of building a school house for the colored people of the county of Loudoun. I am very glad to hear that you are so interested in the welfare of the colored people, and I am sure that your efforts will be successful.

Yours very truly, Wm. H. R. S.

I have the honor to inform you that the Board of Supervisors of the County of Loudoun have decided to purchase the land for the purpose of building a school house for the colored people of the county. I am sure that you will be very pleased to hear of this decision, and I am sure that you will be very active in the efforts to build the school house.

Very truly yours,





456. Of the posterior openings of the nose.

457. Description of the sinus's which communicate with its internal cavity, and their uses.

458. Of the *lachrymal sac*.

459. Of the *Membrana Schneideriana*, or Pituitaria.

Structure, and extent of this membrane.

Of the mucus secreted on its surface.

Remarks on the uses of the pituitary membrane.

460. Of the *olfactory* nerves.

Their passage through the cribriform lamella of the æthmoid bone, and distribution of them over the pituitary membrane.

461. Of the sense of smelling.

462. Of nasal hæmorrhages, *Ozæna*, *Polypus*, &c.

Of the E Y E.

463. *Of the external parts of the eye.*

Of the structure and use of the eye-brows.

Of the eye-lids, &c.

464. Of the lachrymal gland, and its excretories.

465. Structure and uses of the *puncta lachrymalia*, *caruncula lachrymalis*, and lachrymal duct.

Of the Globe of the Eye.

466. Of the *Tunica conjunctiva*, or *adnata*.

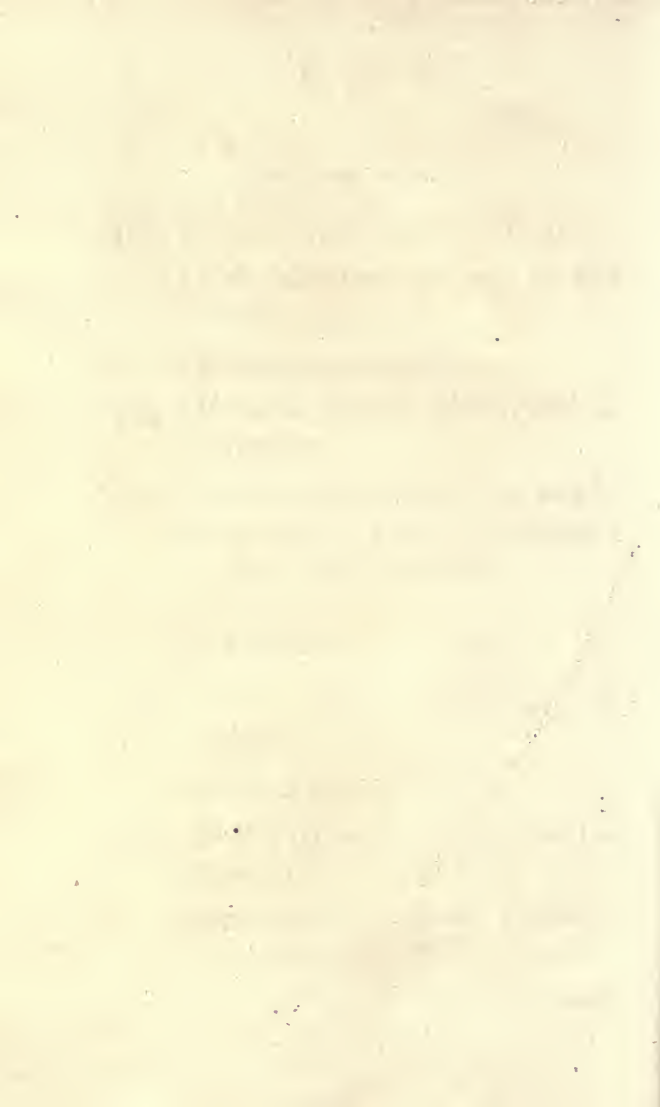
Of the *Tunica albuginea*.

467. Of the six muscles subservient to the eye.

Explanation of their structure, situation, and action.

Remarks









Remarks on the uniform motion
of the eyes.

Of the three proper coats of the eye.

468. General explanation of the manner in which the coats of the eye are formed.

469. Of the *Sclerotica* and *Cornea*.

Particular examination of the structure and uses of this coat.

Of its connexion with the *Choroides*.

470. Of the *Choroides* and *Uvea* or *Iris*.

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471. Of the manner in which the *Uvea* is formed.

472. Of the *Ligamentum Ciliare*.

473. Of the *Pigmentum nigrum*.

474. Of the *Pupil*.

*Remarks on the variety of its structure in different animals.

475. Of the expansion and contraction of the pupil.

Several phenomena hence accounted for.

476. Of the *Retina* and *Optic Nerve*.

477. The entrance of the optic nerve into the orbit, described.

The opinions concerning the manner in which the optic nerves are conjoined.

478. Of the structure and distribution of the *Retina*.

Of the three humours of the eye.

479. General remarks on the situation, transparency, &c. of these humours.

480. Of the Chambers of the eye.

481. Of the *Aqueous Humour*.

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Of its different degrees of transparency, at different periods.

Remarks on the effect of the Jaundice upon this humour.

482. Of the evaporation of the aqueous humour ; and the regeneration of it after it has been artificially evacuated.

483. Pathological remarks on the cause of *Hydrophthalmia*.

484. Of the *Crystalline Humour*.

Of the structure and situation of the Crystalline Lens, and its Capsule.

485. Of its shape and density.

Observations on its want of visible attachment, &c.

Different states of it at different periods of life.

486. Of the *Vitreous Humour*.

Remarks on the quantity, and density of this humour.

487. Of the cellular structure of the membrane which contains it.

Of the cavity for the lodgement of the crystalline, &c.

OF VISION.

488. Of the refracting powers, &c. of the different humours of the eye.

489. Of the respective uses of the three coats of the eye.

490. Observations on the use of the *ligamentum ciliare*.

491. Of the change produced in the eye, that objects may appear distinct at different distances.

492. Of the manner in which the pictures of objects are formed upon the Retina.

493. Of the *punctum cæcum*, and MARIOTTE'S experiment to prove the insensibility of the Retina at that part.

494. Dispute

Who is the author of
the book "The History of the
United States of America"?



494. Dispute betwixt MARIOTTE and PEQUET concerning the seat of vision.

495. Of the causes and effects of the contraction and dilatation of the pupil.

Why we see best from a dark place to a light one, and *vice versa*.

496. Observations on the use of the *pigmentum nigrum*.

Why some people see better in the dark than others, &c.

Several other phenomena accounted for.

497. Remarks on the cause of *Myopia*, or short sight.

498. Of *Presbyopia*, or weak sight.

Observations on the use of glasses to remedy the above imperfections.

499. Of *Cataract*.

Of

Of couching, and the manner of performing that operation.

500. Of the various causes of *Squinting*, and its usual remedies.

501. Of other diseases of the eye, and the methods of treating them.

Of the TEGUMENTS of the Body.

502. Of the *Cuticula* or *Epidermis*.

Its structure and office.

Of its speedy regeneration.

503. Remarks on the operation of blisters.

504. Of the *rete mucosum*.

Its situation and use.

505. Observations on the cause of the black colour of Negroes, &c.

506. Of the *Cutis* or *Skin*.

Its structure in general.

507. Of the papillæ of the skin.

508. Ge-

508. General remarks on the sense of
FEELING.

509. Of insensible transpiration.

510. Of the *glandulæ miliares*.

511. Of the perspirable matter.

Of its secretion, passage, and
escape from the body.

512. Of the quantity of this evacuation.

Experiments of SANCTORIUS, and
others.

513. Of the cutaneous Lymphatics
and of absorption from the sur-
face of the skin.

514. Observations on the use of nu-
tritive baths.

515. Of the *Membrana adiposa*, and
reticular substance.

Their texture and uses.

516. An enquiry into the nature and
use of fat.

517. Observations on the treatment of
Emphysema.

518. Of

518. Of the Nails.
Their structure, use, &c.
519. Of the Hairs.
— Manner of their growth and receiving nourishment.
Of their general utility.
520. Of the *alopecia*, and *plica polonica*.
521. Observations on the collections of hair found in the stomachs of animals, and in some abscesses, &c.
522. Of the supposed integuments of the antients:
523. RECAPITULATION of the principal phænomena of the animal œconomy, which have been taken notice of in the preceding lectures.

CONCLUSION.

COM-

COMPARATIVE ANATOMY.

INTRODUCTION.

1. OF the utility of comparing the structure of man with that of animals.

Of the use of comparative anatomy in reading antient authors, and its importance in the study of Zoology, &c.

2. Observations on the comparative size and strength of animals.
3. Of the general analogy observable in the structure of animals.
4. Of the division of animals into classes.

L

Of

5. Of QUADRUPEDS.

6. Remarks on the peculiarities in the skeletons of different quadrupeds.

7. Observations on the structure, and uses of the tails of various animals.

8. Of the Panniculus Carnosus.

9. Of the situation of the heart compared with that of the same organ in the human species.

10. Of the brain and nerves of quadrupeds.

11. Of the *rete mirabile*, or plexus of blood vessels on each side of the *fella turcica*.

Reflections on the use of this plexus.

12. Of the NOSE of quadrupeds.

Of its internal structure, and of the passage, and distribution of the olfactory nerves.

Re-

Remarks on the cause of the acute sense of smelling in various animals.

13. Of the EARS.

Of the variety in the shape, situation and uses of the external ear.

14. Of the EYE.

Its structure in different animals.

Of the *musculus suspensorius*.

15. Of the membrana nictitans.

16. Of the figure of the pupil in different animals.

Of its extreme dilatability in some animals, as in the cat, &c.

17. Of the different colours of the choroid coat, or *Tapetum*, in different animals.

Why certain animals are enabled to see with very little light.

18. Of the structure of the TEETH in various animals.

Of the difference between the teeth of granivorous, and those of carnivorous animals.

19. Of the want of the *Uvula* in quadrupeds, and the use of the muscle attached to the *Glottis*.

ANATOMY OF A DOG.

20. Of the *Omentum*.

Remarks on the size and extent of the omentum in quadrupeds.

21. Of the chylopoietic viscera.

Of the longitudinal direction of the *valvulae conniventes*.

Structure of the intestines of this animal compared with that of the human intestines.

22. Of the digestion of carnivorous animals.

Remarks on the size of the *Appendix Vermiformis*.

Of the *Pancreas Afellii*.

Of the bags found at the extremity of the rectum.

23. Of the *pancreas*, *spleen*, and *liver* of this animal.

24. The kidneys and urinary bladder, compared with the same parts in the human subject.

25. The openings in the *abdomen* for the passage of the testes to the scrotum, compared with the abdominal rings in men.

26. Of the male parts of generation.

Of the want of *vesiculæ seminales* in the dog.

Remarks on the tedious copulation of this animal.

27. Of the female parts of generation.

28. Of

28. Of the defect of sensible perspiration in this species.

29. Remarks on the cause and prevention of the *Rabies canina*.

Of the *Hydrophobia* and the attempts to cure this disease.

30. Of the peculiarities observable in the anatomy of a HORSE.

31. Of the course of the principal blood vessels, &c.

32. Remarks on some of the most common diseases of horses.

OF RUMINANT ANIMALS.

33. *Of the four stomachs of ruminant animals, compared with the single stomach of other quadrupeds.

Of

• All ruminant animals have more than one stomach.



Of the manner in which rumination is performed.

Why ruminant animals require less food than other granivorous quadrupeds, who have but one stomach.

34. Of the parts of generation of a cow.

Of the *Uterus* and its *Cornua*.

35. Of the Foetus.

36. Of the *Urachus* and *Allantois*, or reservoir of urine peculiar to the foetus of quadrupeds.

OF BIRDS.

37. General remarks on this class of animals.

38. Of the peculiarities in the skeletons of birds.

39. Of the stomach and intestines of the carnivorous, compared with those of granivorous birds.

40. Of

- 40. Of the *succus gastricus*, and the digestive faculties of the carnivorous tribe.
- 42. Of the *ventriculus succenturiatus*, and gizzard.
- 43. Of the triturating power of the gizzard, and the manner in which their food is digested.
- 44. Of the absorbent system in birds.
- 45. Of the kidneys and passage of the urinary secretion.
- 46. Of the extent and attachment of the lungs.
Of their communication with the abdominal vesicles, and the air cells in the bones of these animals.
- 47. Of the Diaphragm.
- 48. Of the brain compared with that of quadrupeds.
- 49. Of the olfactory nerves, and the organ of smelling.

50. Of





50. Of the eye, and its peculiarities in this class of animals.

Of the *Marsupium nigrum*, or *Bourse noire*.

51. Of the organ of hearing in birds.

52. Of the organs of generation in the male.

53. Of the organs of generation in the female.

Of the vitellarium, infundibulum, &c.

54. Of the phænomena attending the passage of the egg to the uterus.

55. Structure of an egg explained.

56. Of the progressive changes which the egg undergoes during incubation.

Of the nourishment of the foetus of oviparous animals.

57. *Of the secretion in the crops of breeding pigeons for the nourishment of their young.

OF AMPHIBIOUS ANIMALS.

58. Of the heart and lungs of amphibia.

Of the peculiarities in the structure of these organs.

59. Of the transverse canals in the septum between the ventricles, exemplified in the heart of a turtle.

Of the use of these canals.

60. Why all the arteries proceed from the right ventricle.

61. Description of the circulation of the blood in this class of animals.

62. Ob-

* See a Dissertation on this subject, and also an account of the Air Cells in the Bones of Birds; in Observations on certain parts of the Animal Œconomy, lately published by Mr. J. Hunter.

62. Observations on the *pulmo arbutarius* enjoyed by them.
63. General remarks on the structure of *serpents*.
64. Of the teeth of serpents, and their canal for the passage of the poisonous fluid.
- Of the reservoir in which this fluid is contained.
65. Of the general effects of wounds made by the teeth of venomous serpents.
66. Observations on the treatment of persons bit by this species of animals.

OF FISHES.

67. Remarks on the structure and use of the fins, tail, and other external parts.
68. Of the situation, and structure of the teeth of fishes?

69. Of the organs of digestion, and of the chylopoietic canal.

70. Of the swimming bladder and its use.

71. Of the size and structure of the liver.

Of the situation of the gall bladder, and course of the hepatic and cystic ducts, &c.

72. Of the *intestinula cæca*, and their terminations.

73. Of the spleen, &c.

74. Description of the heart, and its vessels.

Of the single form of the heart, being composed of one auricle and one ventricle.

75. *Of the circulation of the blood in this class of animals.

Of

* See a Treatise on the Structure and Physiology of Fishes, published in 1785, by Alex. Monro, M. D. Professor of Physic, Anatomy, and Surgery, in the University of Edinburgh.



On the 1st of July 1871

My dear Sir,

I have the pleasure to acknowledge the receipt of your letter of the 29th inst.

in relation to the above mentioned subject.

I have also the pleasure to inform you that the same has been forwarded to the proper authorities.

I am, Sir, very respectfully,
Yours,
J. H. [Name]

[Signature]

[Address]

[City]

[State]

[Country]

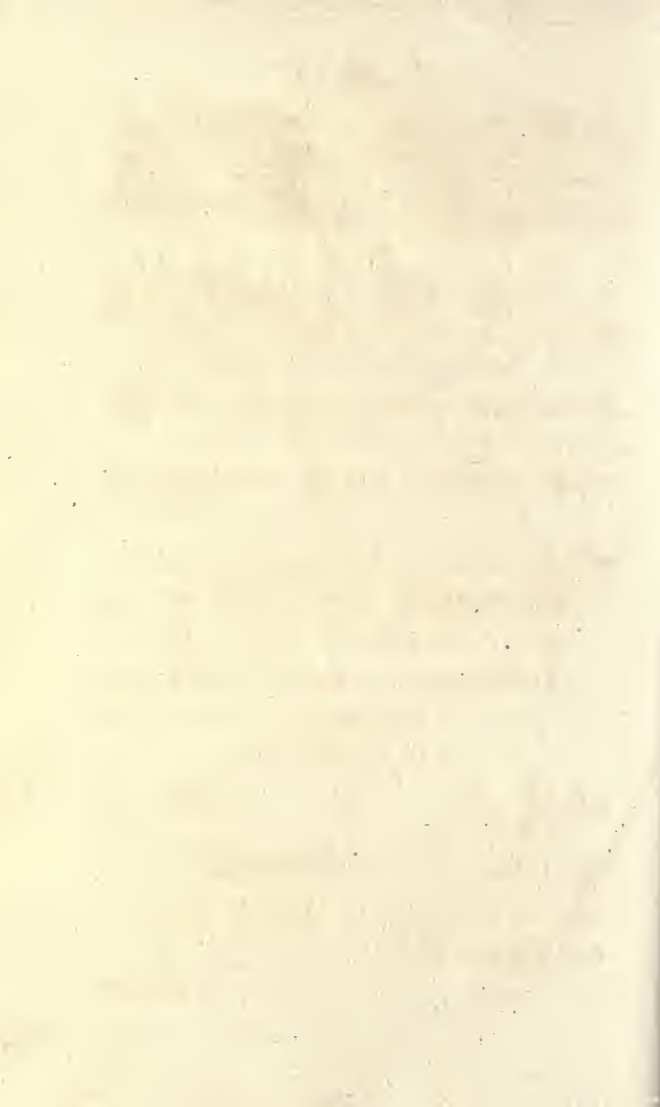
[Post Office]

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Of the passage of the blood from the ventricle of the heart to the gills, by the bronchial artery.

Of the union of the bronchial veins forming trunks, which perform the office of arteries, and convey the blood, (by their ramifications) all over the body.

Of the return of the blood to the heart by the *Venæ cavæ*.

76. Remarks on this mode of circulation, and on the use of the gills.

Observations on the peculiarities of the circulation in the *Sepia Loligo*, or cuttle fish.

77. Of the absorbent system in fishes.

78. Of the Brain and Nerves.

79. Of the organ of smell in fishes.

80. Of the Ear.

81. Its

81. Its structure and situation in the cartilaginous and osseous fishes.

82. Observations on the faculty of hearing in water.

83. Of the eye.

Peculiarities of the crystalline, &c.

84. Of the *mucus ducts*, and the secretion of the liquor for the lubrication of the external surface of fishes.

85. Of the parts of generation in the cartilaginous and osseous fishes.

86. Of *Insects, Vermes, &c.*

CONCLUSION.

81. In literature and religion in the
contagious and obvious fibres.

82. Consideration on the faculty of
the human mind.

83. The human mind.

84. The human mind.

85. The human mind.

86. The human mind.

87. The human mind.

88. The human mind.

89. The human mind.

90. The human mind.

91. The human mind.

92. The human mind.

93. The human mind.

SCOTT'S STANDARD ALPHABET

FOR TEACHERS

OF SCHOOLS

AND

COLLEGES

OF THE

UNITED STATES

OF AMERICA

AND

THE

WEST INDIES

AND

THE

WESTERN ISLANDS

OF THE

PACIFIC OCEAN

AND

THE

INDIAN ARCHIPELAGO

AND

THE

ISLANDS OF THE

PACIFIC OCEAN

AND

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INDIAN ARCHIPELAGO

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ISLANDS OF THE

PACIFIC OCEAN

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INDIAN ARCHIPELAGO

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ISLANDS OF THE

PACIFIC OCEAN

AND

THE

INDIAN ARCHIPELAGO

AND

THE

ISLANDS OF THE

PACIFIC OCEAN

AND

THE

SCELETI OSSIUM CATALOGUS.

*OS Frontis.		Costæ { Veræ septem.
Os Parietale		Spuriæ quinque
Os Temporale		
*Os Occipitis		*Sternum
*Os Ethmoidale		Clavicula
*Os Sphænoidale		Scapula
Os Unguis		Os Humeri
Os Nasi		Ulna
Os Malæ		Radius
Os Maxillare		
Os Spongiosum inferius		
Os Palati		
*Vomer		
*Maxilla inferior		
Dentes { Incisores		
Canini		
Molares		
*Os Hyoides		
Officula { Stapes		
Incus		
Auditus { Malleus		
Os Orbiculare		
*Vertebræ { Colli septem		
Dorsi duodecim		
Lumborum quinq.		
*Os Sacrum		
*Os Coccygis		
Os Innominatum ex { Ilio		
Ifchio		
Pube		
		Costæ { Veræ septem.
		Spuriæ quinque
		*Sternum
		Clavicula
		Scapula
		Os Humeri
		Ulna
		Radius
		Offis Carpi { Scaphoides
		Lunare
		Cuneiforme
		Pisiforme
		Trapezium
		Trapezoides
		Magnum
		Unciforme
		Offa Metacarpi
		Offa Digitorum quindecim
		Os Femoris
		Tibia
		Fibula
		Patella
		Offa Tarfi { Astragalus
		Os Calcis
		Os Naviculare
		Offa Cuneiformia
		Os Cuboides
		Offa Metatarfi quinque
		Offa Digitorum Pedis quatuor-
		decim

MUS.

Those bones which are single in the skeleton, have no asterisk before them,—the rest are in pairs.

REPORT ON THE PROGRESS OF THE WORK DURING THE YEAR 1900

1. General		2. Special
a. The work of the year		b. The work of the year
c. The work of the year		d. The work of the year
e. The work of the year		f. The work of the year
g. The work of the year		h. The work of the year
i. The work of the year		j. The work of the year
k. The work of the year		l. The work of the year
m. The work of the year		n. The work of the year
o. The work of the year		p. The work of the year
q. The work of the year		r. The work of the year
s. The work of the year		t. The work of the year
u. The work of the year		v. The work of the year
w. The work of the year		x. The work of the year
y. The work of the year		z. The work of the year

...

...

...

MUSCULORUM CATALOGUS.

Abdominis	{	Obliquus externus.
		Obliquus internus.
		Transversalis.
		Rectus.
		Pyramidalis.
Frontis et Occipitis.		Occipito-Frontalis.
Superciliorum.		Corrugator.
Genarum	{	Quadratus, five Platysma Myoides.
		Buccinator.
Palpebrarum	{	Orbicularis.
		Aperiens Rectus.
Alarum Nasi	{	Levator.
		Dilator.
		Constrictor five Transversalis.
Labiorum	{	Elevator
		Depressor
		Labii Superioris proprius
	{	Elevator
		Depressor
		Labii Inferioris proprius
	{	Elevator
		Depressor
		Communis.
		Zygomaticus major, et minor.
		Orbicularis.
Auriculam	{	Attollens.
		Retrahens.
Oculorum	{	Obliquus
		Superior, five Trochlearis.
		Inferior.
		Attollens.
		Deprimens.
		Abductor.
		Adductor.
Auris Internæ	{	Externus.
		Internus.
		Obliquus.
		Stapedæus.
Ossis Hyoidis	{	Sterno-hyoidæus.
		Coraco-hyoidæus.
		Stylo-hyoidæus.
		Genio-hyoidæus.
		Milo-hyoidæus.

Lingua

- Dorſi { Sacrolumbalis.
Longiſſimus.
- Lumborum { Quadratus.
Sacer.
Pſoas Parvus.
- Coccygæus.
- Humeri { Pectoralis.
Deltoides.
Supra-spinatus.
Infra-spinatus.
Teres minor, et major.
Latiffimus Dorſi.
Coraco-brachialis.
Subſcapularis.
- Humeri { Biceps Flexor.
Brachiaſus internus.
Biceps extenſor, five Gemellus.
Brachiaſus externus.
Anconæus.
- Volæ Manus. Palmarus longus, et brevis.
- Radii { Supinator longus, et brevis.
Pronator Teres, et quadratus.
- Carpi { Flexor, Radialis, et Ulnaris.
Extenſor, Radialis, et Ulnaris.
- Digitorum Communes { Extenſor.
Flexor { Sublimis, five perforatus.
Profundus, five perforans.
Lumbricales.
Interoſſei.
- Indicis { Indicator.
Adductoꝝ proprius, et communis.
- Digiti minimi { Abductoꝝ.
Primi internodii flexor.
Extenſor.
- Pollicis { Flexor internodii primi, ſecundi, et tertii five longus.
Extenſor internodii primi, ſecundi, et tertii.
Abductoꝝ.
Adductoꝝ, proprius et communis.
- Flexor Offis Metacarpi, minimum Digitum ſuſtinentis.
- Femoris { Pſoas magnus.
Iliacus internus.
Pectineus.
Glutæus magnus, medius et minimus.
Triceps Extenſor.
Iliacus Externus, five pyriformis.
Gemelli.
Obturator externus, et internus five Marſupialis.
Quadratus.

Cru ^r is	{	Membranofus.
		Sartorius.
		Gracilis.
		Bracilis.
		Biceps Flexor.
		Seminervofus
		Seminembranofus.
		Rectus.
		Vaftus externus, et internus.
Tarfi	{	Crureus.
		Poplitæus.
		Tibialis Anticus.
		Gastrocnemius, ubi <i>Tendo Achillis</i> .
		Plantaris.
Digitorum Pedis	{	Soleus.
		Peroneus longus et brevis.
		Tibialis Pofticus.
		Extensor longus, et brevis.
Pollicis Pedis	{	Flexor Perforatus, et Perforans.
		Lumbricales.
		Interoffei.
		Extensor longus, et brevis.
Transverfalis Pedis.	{	Flexor longus, et brevis.
		Abductor.
Digiti Minimi	{	Adductor.
		Flexor Proprius.
Penis	{	Abductor.
		Erectores.
		Acceleratores Urinæ.
Clitoridis, Erector.		
Vaginæ Sphincter.		
Ani	{	Transverfalis.
		Levatores.
		Sphincter.

F I N I S.



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